MAY 2 1 1996

Mr. Ed Sadler, Director
Hazardous Waste Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

Dear Mr. Sadler:

The report entitled Findings of an Investigation to Achieve Final Closure of the Interim TSD Facility Located at the Modine Heat Transfer, Inc. Site, Camdenton, Missouri was recently reviewed and the following comments are provided for your consideration.

Conclusions presented in this report regarding fracture-control of groundwater flow at this site could not be thoroughly evaluated due to problems with the design of the site groundwater monitoring system from which the groundwater data were obtained. Specifically, the long, open, intervals in MW-3 and MW-4 (>100') may allow the inflow of water into the borehole from perched groundwater intervals occurring above the actual saturated zone and yield anomalous water levels that would be relatively useless for determining direction of groundwater flow. Such a scenario could explain the apparent anomalous water levels measured in some of these wells.

Long, open, intervals within the monitoring wells also complicate interpretation of groundwater contaminant data due to the potential for dilution. This is particularly relevant in the case of MW-3 which monitors a significantly longer saturated interval than MW-4. Another complicating factor with regard to well construction is that the facility used air-rotary in drilling the boreholes for MW-3 and MW-4 and this drilling method can significantly alter groundwater quality by changing subsurface oxygen levels. For these reasons, the data from these two wells may not be representative of in situ groundwater quality. The apparent lack of construction details for MW-1 and MW-2 also limits the usefulness of these two wells for obtaining data on the physical and chemical characteristics of site groundwater.

Although conclusions presented in the report may be valid, actual flow conditions at the site cannot be conclusively determined due to the limitations in monitoring system design described above. Additional soil and groundwater characterization work will be necessary at this site to provide sufficient information to determine if the TSD facility is the source of the detected releases. The fracture survey, geophysical logging, packer testing, and geoprobe

ARTD/RCRA/GUTS:JOHNSON:pr:7645:05/17/96:F:\MODINE96.WPD
GUTS GUTS
JOHNSON PEDICINO
JOHNSON 05/17/96
5/17/96

sampling tentatively proposed in the report should provide useful information and a more detailed characterization if properly designed. However, additional borings/monitoring wells will likely be required to provide a thorough characterization of groundwater conditions at the site, especially if groundwater flow is fracture-controlled as suggested in the report.

If you have any questions about these comments, please contact me at (913) 551-7849.

Sincerely,

Jeff Johnson, Geologist
Geology & Underground Tank Support Branch
Air, RCRA & Toxics Division